National Aeronautics and Space Administration

Navigating Software Assurance

Mission Software and Ground Systems Assurance Branch – Code 372

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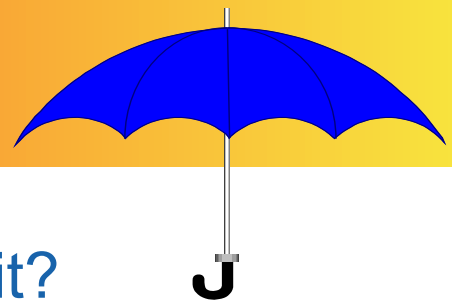
Common Questions



1. What is Software Assurance? Do we need it?
2. What is the difference between Software Quality Assurance and IV&V?
3. If I'm providing software assurance, why is the government (the "Acquirer") providing software assurance?

Roles and Responsibilities of Supplier and Acquirer Software Assurance

Supplier vs. Acquirer

- The Software Assurance Standard, NASA-STD 8739.8, captures the requirements for both the Acquirer and the Provider (a.k.a. Supplier)
- The roles are intended to be complimentary – not duplicative
- Primary focus of Acquirer Software Assurance is one of oversight
- Supplier Software Assurance has the responsibility of ensuring that the developers (including Supply Chain) comply with their software plans, processes, and procedures

Road Trip!

Essentials

- Driver
- Serviced vehicle
- Destination
- Map
- Timetable
- Rest stops
- Road Trip passenger

Translation

- Supplier
- Contract
- Requirements
- SA Plan
- Schedule
- Key milestones
- Acquirer

“Roles” of the Road

Driver -- Supplier

1. Plan the Road Trip
2. Communicate the details/expectations with the Passenger
3. Make decisions regarding deviations from the planned route
4. Drive the planned route and arrive on time (safely and uneventful)

Passenger -- Acquirer

1. Make sure the driver knows where he/she is going
2. Ensure that the driver doesn’t miss an exit or go the wrong way
3. Help to navigate or provide course corrections
4. Arrive at the destination on time

What could go wrong?

Worst Case Scenario

Passenger (a.k.a. Acquirer) becomes a back-seat driver

Supplier
Software Assurance

Key activities include, but are not limited to:

- Ensuring that the software developer follows documented processes and procedures
- Monitoring software schedules and planned activities
- Supporting code walkthroughs
- Test witnessing and reviewing test procedures, test logs, and defect reports
- Verifying safety critical software
- Evaluating software builds and deliverables
- Monitoring risks
- Communicating with Acquirer Software Assurance

Acquirer
Software Assurance

Key activities include, but are not limited to:

- Ensuring the flow down of assurance requirements and the successful implementation of Software Assurance
- Conducting periodic assessments of the Supplier's software assurance efforts and compliance to their documented Software Assurance Plan (SAP) and any supporting internal policies, procedures, etc.
- Reviewing the Supplier's software assurance schedule, assessment results, records, and reports
- Communicating with Supplier Software Assurance

Back-seat Driver

In the event the Acquirer identifies potential risks in the Supplier's software assurance program, Acquirer Software Assurance support may be expanded

Fundamental Differences

Supplier

- Provides insight
- Responsible for monitoring and assessing all software developer processes and products for completeness and accuracy
- Collaborates with the Acquirer on compliance issues and/or any opportunities for improvement

Acquirer

- Provides oversight
- Responsible for monitoring the Supplier's Software Assurance Program and associated artifacts – *data-driven mission success*
- Collaborates with the Supplier on compliance issues and/or any opportunities for improvement

Summary

- Communication and collaboration are key to navigating and implementing software assurance
- Exchange of information and data must flow both ways
- Roles and responsibilities are intended to be complimentary – not duplicative
- Reaching our destination safely and on time is a mutual goal

National Lampoon's Vacation (1983)